

We Claim:

1. Heat resistant FeCrAl-alloy with improved oxidation resistance, characterized in having a Ca-enriched surface layer.
2. Material according to claim 1, characterized in that said Ca-enriched surface layer is 10 nm up to 3 μ m thick, preferably between 10 nm and 500 nm.
3. Material according to any of the preceding claims characterized in that said surface layer has a maximum Ca-content of 0,01-50 wt-%, preferably 0.1-10wt-%.
4. Material according to any of the claims 1-3, characterized in that the FeCrAl alloy comprises (by weight) 10-40 % Cr, 1.5-10 % Al, optionally REM elements and/or Yttrium in an amount up to 0.11 %, up to 4 % Si, up to 1 % Mn, the remainder being iron and normal steelmaking impurities.
5. Material according to any of the claims 1-4, characterized in that the aluminum depletion of the FeCrAl alloy is reduced under cyclic thermal stress.
6. Method of making a heat resistant FeCrAl-alloy with improved oxidation resistance characterized in applying a Ca-containing layer on the surface of the alloy and heat treating in one or several steps.
7. Method according to claim 6, characterized in that the heat treatment is performed at a temperature of between 800°C and 1200°C, preferably between 850°C and 1150°C in an oxidizing atmosphere.
8. Method according to any of the claims 6 and 9, characterized in that the Ca-containing layer is applied in the form of a Ca-containing compound in the form of calcium carbonate, calcium nitrate, calcium stearate, calcium-rich colloidal dispersion or in the form of calcium oxide or mixtures of such oxides or in combination thereof.
9. Method according to any of the claims 6-8, characterized in that the Ca-containing compound is applied to a FeCrAl alloy in form a foil.

10. Method according to any of the claims 1 and 8 to 9, characterized in that the Ca-containing compound is applied by Physical Vapor Deposition (PVD) methods.
11. Use of the alloy according to claims 1-10 in form of thin foils for heating applications or catalytic converter applications.